Marked-up version

WHAT IS CLAIMED IS

1. A pipette tip which contains a chromatography or separation material and has an upper end and a lower end and has one or more perforations or incisions to permit the selective passage of smaller particles or fluids through said perforations or incisions while retaining larger particles in the tip.

2. A pipette tip, as in claim 1, wherein said pipette tip is a holding unit from the group consisting of a tube, a housing, a column, and a vial.

3. A pipette tip, as in claims 1 or 2, wherein said pipette tip is of any shape or size.

4. A pipette tip, as in claim 1, wherein multiple units of said pipette tip are joined together in any type of configuration including but not limited to 2-unit, 8-unit, 48-unit, 96-unit, 384-unit or 1536-unit formats.

5. A pipette tip, as in claim 1, wherein said upper end and said lower end are closed or open ends.

6. A pipette tip, as in claim 1, wherein said pipette tip does not contain a chromatography or separation material.

7. A pipette tip, as in claim 1, wherein said pipette tip is made of one or more materials from the group consisting of

but not limited to polytetrafluoroethylene, polysulfone, polyethersulfone, polypropylene, polyethylene, fluoropolymers, cellulose acetate, polystyrene, polystyrene/acrylonitrile copolymer, PVDF, and glass.

8. A pipette tip as in claim 1, wherein the volume of said pipette tip is between 0.00001 and 100 milliliters.

9. A pipette tip [Perforations or incisions] as in claim 1, wherein one or more of said perforations or incisions are made at the bottom of or on the lateral sides of said pipette tip.

10. A pipette tip [Perforations or incisions] as in claim 1, wherein said perforations or incisions include one or more from the group consisting of cracks, slits, cuts, holes, and orifices.

11. A pipette tip [Perforations or incisions] as in claims 1 or 10, wherein the method to make said perforations or incisions is a chemical or physical method from the group consisting of cutting with a knife, blade, or laser beam, applying heat or pressure, using chemical reactions, or using any other methods that can be used to perforate, cut or crack the said pipette tip to permit the selective passage of particles or through said perforations or incisions.

12. A pipette tip [Perforations or incisions] as in claims 1 or 10, wherein said perforations or incisions are made during the molding process through which said pipette tip is formed.

13. A pipette tip as in claim 1, wherein said pipette tip contains a chromatographic or separation material which can be in a form from the group consisting of particle, powder,

sheet, woven, and non-woven or in any other physical configuration suited to the design of said pipette tip and the experimental conditions.

14. A pipette tip [A chromatography or separation material] as in claim 13, wherein said chromatographic or separation material is one type of material or a mixture of different sizes of particles or different types of materials such as a mix of cation and anion exchange materials.

15. A pipette tip [A chromatography or separation material] as in claim 13, wherein said chromatography or separation material is of the group consisting of chromatographic silica, polystyrene, carbon, polymers, media, gels, bacteria, living cells, solid powders or any other media used for the purposes of sample filtration, separation or purification.

16. A pipette tip [A chromatography or separation material] as in claim 13, wherein said chromatography or separation material particles can be chemically or physically modified to alter the nature of the separation process.

17. A pipette tip which contains a chromatography or separation material and has an upper end and a lower end and has one or more perforations or incisions to permit the selective passage of smaller particles or fluids through said perforations or incisions while retaining larger particles in the tip during a sample separation process.

18. A Pipette tip [A sample separation process] as in claim 17, wherein said sample separation process can consist of any method used to separate, filter or purify molecules or

particles, through centrifugation, gravitation, vacuum suction, pressure application, syringe-based sample delivery through said pipette tip, or any other applicable methods.

19. A pipette tip [A sample separation process] as in claim 17, wherein said sample separation process is performed for applications from the group consisting of high throughput screening, purification of proteins, peptides, DNA and other bio-molecules, size-based separation of molecules, chemical properties based separation of sample components, and, physical properties based separation of sample components.

20. A pipette tip as in claim 1 wherein said pipette tip is combined with a piston or similar device designed to pull the sample into said pipette tip or push said sample out of said pipette tip.